

ABSTRACT

A gas stream with a reduced oxygen concentration relative to ambient air is used to vaporize a liquid fuel or liquified higher hydrocarbon gas, or is mixed with a vaporized gas, and the reduced oxygen vaporized fuel gas is fed to a combustion device such as a premixed or diffusion combustor. Preferably, the oxygen content of the gas stream is less than the limiting oxygen index. By mixing the fuel with a gas stream that has an appropriately reduced oxygen content, auto-ignition prior to the flame front can be avoided. In some embodiments, the reduced oxygen stream is generated from an air separator or taken from the exhaust of the combustion device.